



# Technology and distractions

**Innovation Project Written Report**

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*How often throughout your typical day are you consumed with some form of technology?*

In modern society, it is often difficult for most to give full focus to one task, rather than several, usually a result of one's distraction to technology. The various forms of technology that surround us can pose as a huge distraction in our lives and can greatly affect our abilities to focus on the task at hand. Our exhibit explores the cognitive science of distraction through the example of mobile phone use and driving.

In modern cognitive science, the theory behind multitasking is often referred to as the *threaded cognition theory* (TCT). This theory deals with a computational model of the brain, with mechanisms for resource management, conflict resolution and execution. TCT is useful when modelling multi-tasking versus task performance. When performing 'resource' consuming tasks, one must consider not only conscientiously proposed tasks, but tasks generated from outside the system. These can be referred to as distractions, and they consume resources through outlets such as our ears, eyes, or brain. For example, Science School schoolwork often requires full focus, or resources, and simple distractions such as the computer or television set can prove to be powerful distractions. The brain simply cannot allocate the required resources to the task of schoolwork, while a computer or television drains them. This concept is not unfamiliar to most, and TCT is a comprehensible framework.

From the discovery of fire to 3D television, humans have benefited from the evolution of technology, no matter how elementary. However, as much as technology has simplified many aspects of society, the use of technology has also complicated other aspects. In many situations, technology can serve as a distraction, a resource drain, in terms of TCT, to other major tasks such as schoolwork, driving, and social interactions. Examples of commonly distracting technology include mobile devices, computers, television and music devices. One of the most serious examples of distractions from technology is the case of driving a vehicle. It is suggested that twenty-five percent of car crashes are associated with driving and cellular device use. Thus, it is no surprise that numerous organizations have recently campaigned against distractions while driving, particularly those of technology.

The visitors will be presented with the idea of driving while distracted with a driving simulation. A real, modified car will be used to give the most realistic experience. The windshield will be modified into a large monitor, displaying a virtual road. An initiating text from the system will identify the challenge, IE. - driving to the supermarket to get milk. Throughout the course, visitors pass through various checkpoints, such as stop signs, traffic lights, etc. The first few checkpoints are completed without text messages; this is the trial standard or control. Nearing the rest of the checkpoints, text messages will pop up on a phone mounted beside the steering wheel. Visitors are evaluated based on a points system, earning and losing points for opening and replying texts, stopping distance, and reaction time to the obstacles. Visitors also have an option to use their own smart phone by downloading the application corresponding to the exhibit. The application will monitor the visitors' progress. The smart phone application also offers games related to focus and distraction, as well as links to websites for more information on the topic. Before the simulation begins, visitors will be asked for their age range to aid in data collection. At the end of the simulation, visitors will have the option to submit their results, which will be collected and displayed around the exhibit.

With numerous recent campaigns against distractions during driving, along with statistics such as those prescribed, it is ironic how so many still manage put one's life at risk and allocate the brain's resources on a mobile device while driving. This can be extended to all aspects of life, where one might ignore others in conversation, or slack-off on work. It is this realization by the visitor that this exhibit hopes to achieve, allowing a personal 'take-home' experience.

Finally, although *threaded cognition theory* may assert a model for conflict resolution of resources in our brain, one must remember that the brain cannot resolve conflicts when the resources simply don't exist and the limit of multitasking has been reached.

## References

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